



Food and Agriculture Organization  
of the United Nations

**WASAG**

The Global Framework on  
Water Scarcity in Agriculture

# Characterization and sharing of quinoa's biodiversity

Its global spreading beyond its origins

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# Quinoa, an Andean crop

*Chenopodium quinoa* Willd.

- Domesticated 7000 years ago
- Rejected during the Spanish conquest
- Rediscovered during the 20<sup>th</sup> century
- Many new producers outside the Andes
- Genetic resources for adaptation



Cancosa, Chile  
Quinoa field at 4,600 masl

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# Quinoa's resilience thanks to high genetic diversity



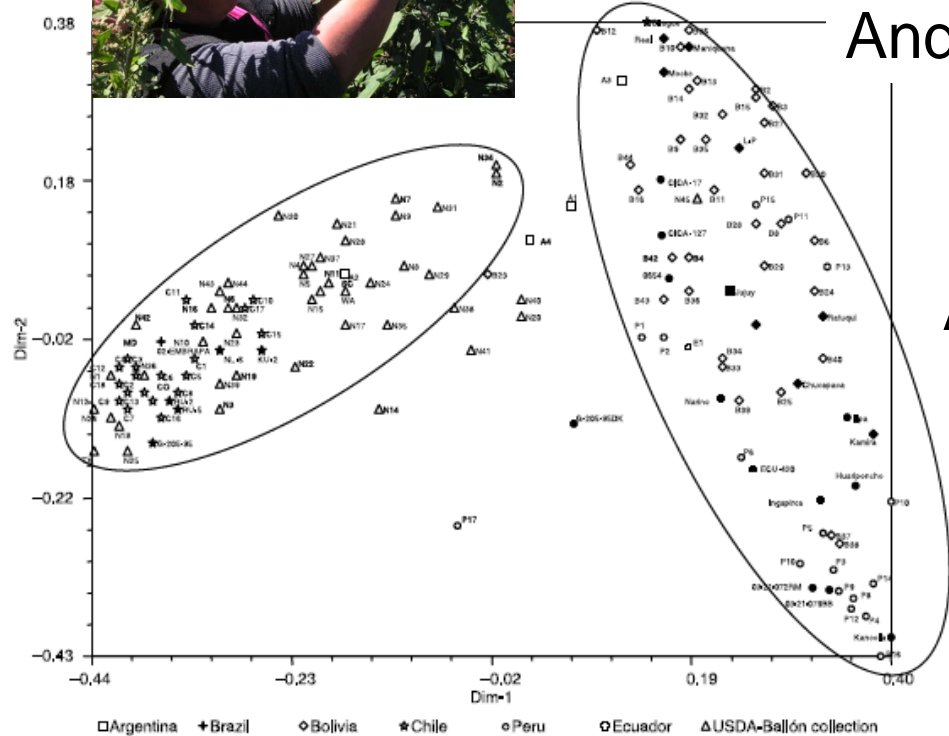
- A single domesticated species but five major ecotypes:
  - Quinoa from the **Highlands** (Peru y Bolivia)
  - Quinoa from **Inter Andean Valleys** (Colombia, Ecuador y Peru)
  - Quinoa from the **Yungas** (Bolivia)
  - Quinoa from **Salares** (Bolivia, Chile y Argentina)
  - Quinoa from **Sea level** (Chile)



# From the Andes to the world



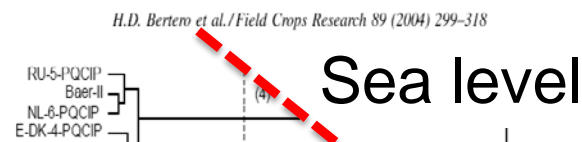
Lumako, South Chile  
Quinoa at 600 masl



Andean Valleys

Salares

Altiplano



Pichilemu, Central Chile  
Quinoa field at 30 masl



Christensen et al. 2007. Plant Genet. Res.  
Bertero et al, 2004. Field Crop Research

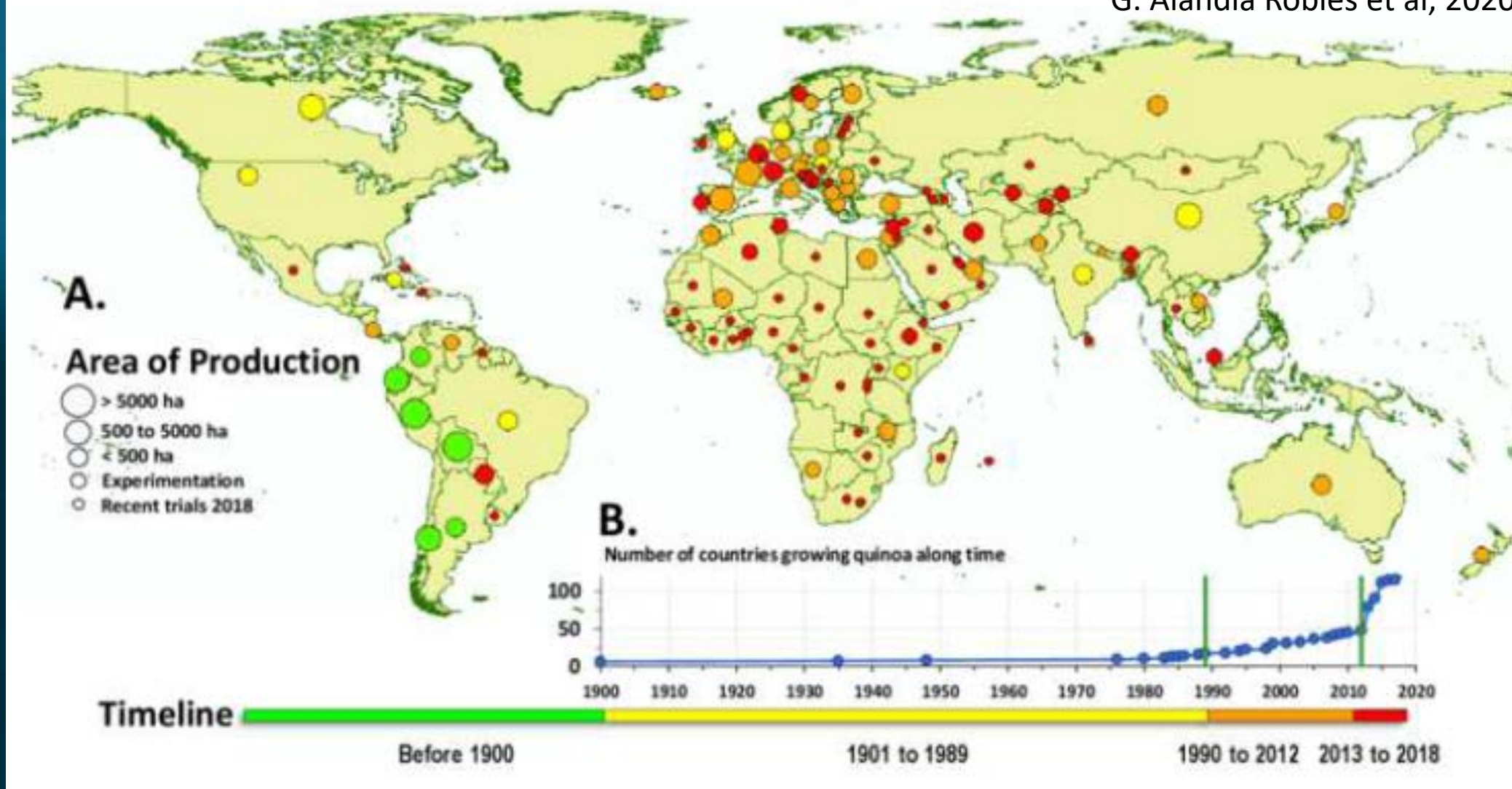


# Quinoa Worldwide Genetic Resources Distribution (*in situ* and *ex situ* conservation)



# Quinoa worldwide expansion

G. Alandia Robles et al, 2020





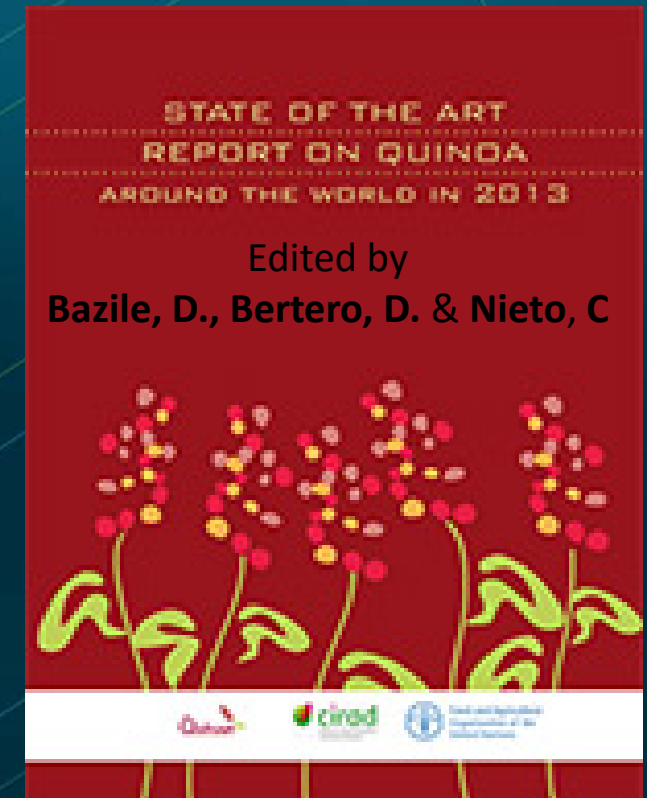
# Quinoa, a model-crop for transformative changes

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## Quinoa's biodiversity & ...

- Adaptive crop for marginal environments
- Agroecological practices
- Nutrition-Sensitive agriculture
- Incomes for small-scale farmers
- Farmers maintain agrobiodiversity for global changes adaptation

**ANDES ↔ WORLD**





# Key messages for concluding



- **Access** to quinoa germplasm **and benefit sharing** from its utilization should be addressed, recognizing the hard work of the Andean people in the **selection and conservation** of local quinoa landraces,
- maintaining and adding value to quinoa's biodiversity through diversification for the benefit of **global food security** and **poverty reduction**.
- **Quinoa is more than only a crop**: its biodiversity is at the heart of an **innovative agri-food system** that can really inspire for its spreading.





# Thanks for your attention !



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